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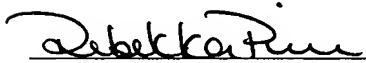
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CERTIFICATION

I, the below named translator, hereby declare that: my name and post office address are as stated below; that I am knowledgeable in the English and German languages, and that I believe that the attached text is a true and complete translation of PCT/EP2004/052632, filed with the European Patent Office on October 22, 2004.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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**Description**

**Method for carrying out a survey of a plurality of participant communication devices, and corresponding communication devices**

Conventional radiophones, which are known for example by the name Walkie-Talkie, allow speech messages to be sent in real time to one or more partners. During speech the transmitting party presses a specific speaking key. As a result he blocks other participants from speaking. Transmission takes place therefore according to a semi-duplex system. Communications services of the semi-duplex system type are also called PTT services (PTT: Push To Talk). The current Push-to-Talk services generally only allow transmission of speech messages.

The object of the invention is to carry out a survey of a plurality of participant communications devices in a simple manner. This object is achieved by the following method according to the invention:

Method for carrying out a survey of a plurality of participant communications devices, wherein only one of these communications devices in each case is assigned an exclusive transmission right to transmit at least one useful message during an authorization period, on the basis of its specific request signal, while the other participant communications devices are only assigned a reception right to receive at least one useful message, and wherein the communications device authorized to transmit determines a time response window for the survey of the participant communications devices, within which window it is possible for the respective participant communications device to provide its

1    respective response signal to the survey in that it sends at  
2    least once its own specific request signal as the response  
3    signal for requesting the exclusive transmission right.

4  
5    As a result of the fact that the respective participant  
6    communications device provides its respective response signal  
7    to the survey, that it sends at least once its own specific  
8    request signal as the response signal, it is possible to use  
9    the existing functionalities of the participant  
10    communications devices without modification to carry out a  
11    survey. Thus communications devices that are already in use  
12    can be used to carry out a survey without any special  
13    modification.

14  
15    As a result of the method according to the invention,  
16    different types of survey may advantageously be carried out.  
17    These include surveys with Yes/No responses, with one  
18    response from a plurality of possible responses, with  
19    multiple responses from a plurality of possible responses, or  
20    with responses which require a text to be input. The text is  
21    input into the communications device in the form of a Morse  
22    code for example.

23  
24    Simple handling of the conducting of a survey, both for the  
25    communications device authorized to transmit and which  
26    initiates the survey, and for the other participant  
27    communications devices which participate in the survey, is  
28    also achieved.

29  
30    The invention also relates to a communications device  
31    authorized to transmit for carrying out a survey of a  
32    plurality of participant communications devices, comprising a  
33    reception unit for receiving its exclusive transmission right  
34    to transmit at least one useful message during an

1 authorization period, on the basis of its specific request  
2 signal, while the other participant communications devices  
3 can only be assigned a right to receive at least one useful  
4 message, comprising a processing unit for determining a time  
5 window within which it is possible for every communications  
6 device participating in the survey to provide its respective  
7 response signal to the survey in that it sends at least once  
8 its own specific request signal as the response signal for  
9 requesting the exclusive transmission right, and comprising a  
10 transmission unit by means of which its response signal can  
11 be sent by sending at least once its own specific request  
12 signal to request an exclusive transmission right.

13  
14 The invention also relates to a communications device  
15 authorized to receive for carrying out a survey of a  
16 plurality of participant communications devices, comprising a  
17 transmission unit by means of which its response signal can  
18 be sent by sending at least once its own specific request  
19 signal to request an exclusive transmission right.

20  
21 Other developments of the invention are recited in the sub-  
22 claims.

23  
24 The invention and its developments will be described in more  
25 detail hereinafter with reference to drawings, in which:

26  
27 Fig. 1 shows, in a schematic diagram, an arrangement  
28 for carrying out a survey of a plurality of  
29 participant communications devices according  
30 to a first variant of the method according to  
31 the invention and associated modifications,  
32 and

33

Fig. 2 to 5 show different variations of response signals which may be provided by the respectively responding communications device when carrying out different variations of the survey method according to the invention.

Elements with the same function and mode of operation are provided with the same reference numerals in Fig. 1 to 5.

Fig. 1 shows an embodiment for a PTT system (Push-to-Talk). A service of a PTT system is called a PTT service. A possible specification for a PTT system is given for example in the document "Push-to-Talk over Cellular (PoC), Architecture v.1.1.0, PoC Release 1.0, at "[http://www.ericsson.com/multiservicenetworks/distr/PoC\\_specifications.ZIP](http://www.ericsson.com/multiservicenetworks/distr/PoC_specifications.ZIP)".

This Push-to-Talk system has a star-type organization. A central PTT server PS, which is connected to all participant communications devices KE1, KE2, KE3, is located in the center of Fig. 1. The PTT server PS controls the PTT service and distributes the relevant communications signals to the participant communications devices KE1, KE2, KE3.

Within the scope of the invention the term "communications device" includes a mobile communications device according to the UMTS standard (UMTS - Universal Mobile Telecommunications System) or according to the GSM standard (GSM - Global System for Mobile). According to a further embodiment a communications device can be produced as a landline device, for example as an ISDN terminal (ISDN - Integrated Subscriber Digital Network) or as a computer unit connected to the public internet and/or intranet.

1 A PTT service is conventionally characterized in that only  
2 one of the communications devices in each case, such as KE3,  
3 is assigned an exclusive transmission right to transmit at  
4 least one useful message, such as NN, NN2, during an  
5 authorization period, such as BT. During this authorization  
6 period BT the other communications devices, such as KE1 and  
7 KE2, participating in the survey are only assigned a  
8 reception right to receive at least one useful message NN,  
9 NN2. Useful messages NN, NN2 are transmitted in this case  
10 according to a semi-duplex system. The useful message NN, NN2  
11 is delivered in real time to the communications devices KE1,  
12 KE2 authorized to receive. The useful message NN, NN2 can  
13 *inter alia* comprise multi-media data, such as audio data,  
14 video data or text data.

15  
16 In Fig. 1 the communications device KE3 has the exclusive  
17 transmission right to transmit useful messages NN, NN2. It  
18 comprises a transmission unit SEE3 for sending one or more  
19 signal(s) and/or message(s) and a reception unit EME3 for  
20 receiving one or more signal(s) and/or message(s). In  
21 addition there is an evaluation unit AWE for evaluating the  
22 survey and a management unit VAE3 which controls the survey  
23 for example. Finally, there is also an interconnecting  
24 network VX3 which allows the exchange of information between  
25 the various units SEE3, EME3, AWE and VAE3 of this  
26 communications device KE3.

27  
28 The communications devices KE1, KE2 in Fig. 1 are also only  
29 authorized to receive at least one useful message NN, NN2.  
30 They have a respective transmission unit SEE1, SEE2 for  
31 sending one or more signal(s), and/or message(s) and a  
32 respective reception unit EME1, EME2 for receiving one or  
33 more signal(s) and/or message(s). They also include a  
34 respective management unit VAE1, VAE2 to generate the

1   respective response signal AWS1, AWS2 for example. In  
2   addition a respective interconnecting network VX1, VX2 is  
3   provided which allows the exchange of information between the  
4   various units SEE1, EME1 and VAE1 and SEE2, EME2 and VAE2  
5   within the respective communications device KE1, KE2.

6  
7   The course over time for carrying out a survey will be  
8   described in more detail hereinafter with reference to Fig.  
9   1. This survey is initiated by communications device KE3.  
10   Once the communications devices KE1, KE2, KE3 participating  
11   in the survey have registered with the PTT server, the  
12   communications device KE3 sends its specific request signal  
13   FS to the PTT server PS. It thereby requests the exclusive  
14   transmission right to transmit useful messages NN, NN2. The  
15   PTT server PS then decides whether the exclusive transmission  
16   right can be assigned to the communications device KE3 making  
17   the request. As no other communications device KE1, KE23, KE3  
18   has been assigned the exclusive transmission right, the PTT  
19   server PS assigns the exclusive transmission right to the  
20   communications device KE3 making the request by means of a  
21   positive acknowledgement message PBN. The communications  
22   device KE3 authorized to transmit accordingly has the  
23   possibility, within the authorization period BT, to send at  
24   least one useful message NN, NN2 or to also initiate at least  
25   one survey.

26  
27   At the start of the survey the communications device KE3  
28   authorized to transmit transmits at least one useful message  
29   to the PTT server which forwards this in real time to the  
30   communications devices authorized to receive. This useful  
31   message contains a question and possibly also a choice of  
32   possible responses to the survey. This useful message can  
33   optionally be configured in the form of a speech message or a  
34   text message. In this embodiment the communications device

1 KE3 sends the useful message NN with the following question  
2 to the PTT server PS: "Shall we go for dinner? Please answer  
3 with Yes or No". As soon as it has received this useful  
4 message NN the PTT server PS forwards it to the  
5 communications devices KE1, KE2.

6  
7 A time window is then started by the communications device  
8 authorized to transmit, within which it is possible for the  
9 communications devices KE1, KE2, KE3 participating in the  
10 survey to provide their respective response signal AWS1,  
11 AWS2, AWS3 to the survey. It may be advantageous to  
12 communicate the start of the time response window, for  
13 example by means of an audio signal, to the communications  
14 devices participating in the survey. Thus a first audio  
15 signal can be generated for example by pressing a survey key  
16 STN on the communications device KE3 authorized to transmit.  
17 This signal is incorporated into the useful message NN and  
18 transmitted to the other communications devices KE1, KE2  
19 participating in the survey. In an alternative variation, a  
20 text message is transmitted to the communications device  
21 participating in the survey, which message indicates the  
22 start of the time response window TU. In this embodiment the  
23 communications device KE3 authorized to transmit adds the  
24 following additional text to the useful message NN with the  
25 question: "Please give your answer now".

26  
27 At the same time, or in advance, the communications device  
28 KE3 authorized to transmit informs the PTT server PS about  
29 the start of the time response window TU by means of a survey  
30 status message VSQ. The PTT server PS can optionally not  
31 allow any new communications devices for this PTT service  
32 during the time response window TU. In addition the server  
33 can buffer the specific request signals FS sent within the  
34 time response window TU by the communications devices KE1,



1 KE2, KE3 participating in the survey for subsequent  
2 evaluation of the survey.

3  
4 Once the time response window has started, the communications  
5 devices participating in the survey have the opportunity to  
6 provide their respective response signal to the survey. It is  
7 advantageous that the specific request signal, such as FS, is  
8 sent at least once. In the present embodiment the "Yes"  
9 response is provided by sending the specific response signal  
10 FS once and the "No" response by sending the specific  
11 response signal FS twice. The communications device KE2  
12 answers "yes" in response to the survey. The communications  
13 devices KE1, KE3 answer "No". The communications device KE2  
14 thus sends its specific request signal FS to the PTT server  
15 PS once for its response signal AWS2. The other two  
16 communications devices KE1 and KE3 transmit their respective  
17 specific request signal FS twice in each case. Their response  
18 signals AWS1, AWS2 are thus comprised of two respective  
19 specific request signals FS which are surrounded in Fig. 1 by  
20 a broken ring.

21  
22 After reaching the end of the time response window, no  
23 further response signals from the communications devices  
24 participating in the survey are taken into account. The end  
25 of the time response window can for example be announced by a  
26 second audio signal. This is sent by the communications  
27 device authorized to transmit, such as KE3, by means of a  
28 further useful message, such as NN2, to the PTT server and  
29 subsequently to the other communications devices  
30 participating in the survey, such as KE1 and KE2. In addition  
31 it is possible for the end of the time response window to be  
32 determined at the start of the time response window and to  
33 automatically elapse after the predetermined time.  
34 Alternatively it may optionally also be expedient to indicate

1 the end of the time response window to the participant  
2 communications devices by means of a text or picture message.  
3 In the embodiment of Fig. 1 the communications device KE3  
4 authorized to transmit sends the useful message NN2 to the  
5 PTT server PS, which message indicates the end of the time  
6 response window TU. This useful message NN2 includes the  
7 speech message "The survey has now finished". As soon as the  
8 PTT server PS has received this useful message NN2 it  
9 forwards it to the communications devices KE1, KE2.

10  
11 Once the time response window has ended, the communications  
12 device authorized to transmit retrieves from the PTT server  
13 status information which relates to the survey. The  
14 communications device authorized to transmit inquires by  
15 means of a result inquiry message how many communications  
16 devices participated in the inquiry and how many decided on  
17 the respectively admissible responses. The PTT server then  
18 responds with at least one result response message and hereby  
19 transmits the status information inquired about to the  
20 communications device authorized to transmit. In the  
21 embodiment of Fig. 1 the communications device KE3 requests,  
22 with the result message VEQ, some status information with  
23 respect to the survey from the PTT server PS. The PTT server  
24 PS transmits the following status information to the  
25 communications device KE3 by means of the result response  
26 message VEA:

- 27 - number of communications devices which participated in the  
28 survey: 3
- 29 - number of communications devices which provided their  
30 specific request signal once in each case during the time  
31 response window: 1
- 32 - number of communications devices which provided their  
33 specific request signal twice in each case during the time  
34 response window: 2

1  
2 This status information is evaluated in the communications  
3 device authorized to transmit by means of an evaluation unit.  
4 One or more survey result(s) is/are compiled therefrom.  
5 Alternatively the evaluation can also be made manually by the  
6 user of the communications device authorized to transmit. In  
7 the embodiment the evaluation device AWE of the communication  
8 device KE3 evaluates the status information. The survey  
9 result indicates that one of the three participant  
10 communications devices KE1, KE2, KE3 voted "Yes" and two of  
11 the three participant communications devices KE1, KE2, KE3  
12 voted "No".

13  
14 In a further step one or more survey result(s) can be  
15 forwarded for example to the communications devices  
16 participating in the survey. It can be expedient to transmit  
17 one or more survey result(s) in text form, for example via  
18 SMS (SMS - Short Message Service). In the present embodiment  
19 of Fig. 1 the following useful message NN2 is forwarded as  
20 the survey result by the communications device KE2 to the  
21 communications devices KE1, KE3: "The result of the survey  
22 is: NO".

23  
24 Finally, the communications device authorized to transmit  
25 again provides its transmission right to transmit useful  
26 messages. For this purpose the communications device KE3  
27 authorized to transmit sends a transmission end message ES to  
28 the PTT server PS, whereupon the PTT server PS cancels the  
29 exclusive transmission right.

30  
31 Generation of the specific request signal may be triggered by  
32 actuating a key on the communications device. The specific  
33 request signal may be sent by means of a transmission unit.  
34 It is advantageous in practice to use this key to also

1 provide the response signal. In Fig. 1 the respective request  
2 signal FS is triggered by pressing the respective key ST1,  
3 ST2, ST3 on the respective communications device KE1, KE2,  
4 KE3. The respective key ST1, ST2, ST3 is housed inside the  
5 respective management unit VAE1, VAE2, VAE3. The respectively  
6 generated specific request signal FS is then sent by means of  
7 the respective transmission unit SEE1, SEE2, SEE3. In Fig. 1  
8 the respective response signal AWS1, AWS2, AWS3 is effected  
9 by pressing the respective key ST1, ST2, ST3 of the  
10 communications device KE1, KE2, KE3.

11  
12 It is also possible with the method according to the  
13 invention to carry out different types of surveys by sending  
14 the specific request signal FS once or several times:

15  
16 - Survey with Yes/No responses:

17 With this type of survey a Yes or No response is  
18 anticipated. A Yes response can be indicated by sending the  
19 specific request signal FS once. A No response can be  
20 communicated in that no specific request signal FS is sent  
21 during the time response window TU. In general the Yes/No  
22 response signals can be generated in that both differ by  
23 different combinations of sending and/or not sending one or  
24 more request signal(s).

25  
26 - Survey with a response from a plurality of possible  
27 responses:

28 In this case the communications device participating in the  
29 survey can provide one of the possible responses. The  
30 response signal pertaining to a response consists of a  
31 combination of sending and/or not sending one or more  
32 request signal(s). A clear combination is selected for each  
33 response signal. For example there are four responses to  
34 choose from. In this case the first response is expressed

1 by sending the specific request signal FS once, the second  
2 response by sending it twice, the third response by sending  
3 it three times and the fourth response by sending it four  
4 times during the time response window TU. According to Fig.  
5 2, the responding communications device KE3 decides on the  
6 third response and therefore sends its specific request  
7 signal FS three times during the time response window TU  
8 for its response signal AWS4.

9  
10 - Survey with more than once response from a plurality of  
11 possible responses:  
12 In this case the participant communications device can  
13 provide more than one response from a plurality of possible  
14 responses during the time response window. The partial  
15 response signal associated with a specific response  
16 consists of a combination of sending and/or not sending one  
17 or more request signal(s). To provide a plurality of  
18 responses within the response signal, these partial  
19 response signals are sequentially arranged one after the  
20 other. To distinguish between the individual responses it  
21 may be expedient to take into account a waiting time PT  
22 between provision of the individual responses. In the  
23 example of Fig. 3, there are four responses to choose from,  
24 wherein the responses one and four are provided. For this  
25 purpose communications device KE2 sends the first partial  
26 response signal AWS5A, which consists of a single specific  
27 request signal FS. After a waiting pause PT, for example of  
28 two seconds, the communications device KE2 signals its  
29 second partial response signal AWS5B, i.e. response four,  
30 by sending its specific response signal FS four times. The  
31 response signal AWS5 for this survey is thus composed of  
32 the first partial response signal AWS5A, followed by a  
33 waiting time PT and subsequently of the second partial

response signal AWS5B. This response signal AWS5 is provided during the time response window TU.

- Survey with rows of text or letters as the response:

In this case one or more letter(s) and/or number(s) are provided as the response. For example a question is asked about a specific year or the name of a prominent actor. For this purpose the participant communications device can provide its respective response signal in that a clear combination of sending and/or not sending of the specific request signal FS is clearly allocated to each letter and/or each number. Using sequential transmission of a plurality of letters and/or numbers corresponding rows of letters and/or numbers may also be formed. This clear allocation can for example be produced in the form of a Morse code. Alternatively or additionally the letters and/or numbers can be input with the aid of a keypad, wherein a letter and/or a number is potentially allocated to a specific key on the keypad. By actuating a key a letter and/or number is reproduced in the form of a clear combination of sending and/or not sending of the specific request signal. As an example, a question is asked in a survey about a date which consists of four numbers, for example 1992. If the respective communications device is in the form of a mobilephone according to the GSM standard and comprises a 3 x 4 keypad, this keypad thus reproduces *inter alia* the numbers 0 to 9 with a separate key in each case. When a key is actuated a clear combination of sending and/or not sending of the specific request signal FS is generated and transmitted. By pressing the keys "1", "9", "9" and "2" the corresponding response signal to the survey is provided.

1 In practice it may be expedient to correct one or more  
2 response signal(s) during the time response window. According  
3 to Fig. 4 a provided response signal AWS may be corrected in  
4 that a further response signal corrects the provided response  
5 signal after a waiting time WT following provision of a  
6 response signal. In the present example the response signal  
7 AWS6 is firstly provided by sending the specific request  
8 signal FS three times. After the waiting time WT, such as  
9 three seconds, this is overwritten by the further response  
10 signal AWS7 which consists of sending the specific request  
11 signal FS once. The response signals AWS6, AWS7 were provided  
12 during the time response window TU.

13  
14 According to a further alternative development, it may be  
15 expedient to cancel one or more provided response signal(s)  
16 during the time response window TU. According to Fig. 5, a  
17 clear combination of sending and/or not sending of the  
18 specific request signal is used as the clearing signal. For  
19 example in a survey in which a response signal AWS8 has  
20 already been provided by sending the specific request signal  
21 FS once, cancellation is possible by providing the clearing  
22 signal AWS9. The clearing signal AWS9 is produced by four  
23 specific request signals FS sent in quick succession.

24  
25 As an alternative to evaluation of the response signal by way  
26 of the communications device authorized to transmit,  
27 evaluation may also take place by way of the PTT server. For  
28 this purpose the communications device authorized to transmit  
29 transmits a result request signal to the PTT server once the  
30 time response window has ended. The PTT server thereupon  
31 evaluates one or more item(s) of status information which  
32 relate(s) to the survey and establishes one or more survey  
33 result(s). It then sends one or more survey result(s) by  
34 means of at least one result response signal to the

1 communications device authorized to transmit. Alternatively  
2 the PTT server can distribute the survey result directly to  
3 the communications devices participating in the survey.  
4 According to Fig. 1 the communications device KE3 requests  
5 the survey result from the PTT server PS by means of the  
6 result request signal VSQ. The PTT server PS then sends the  
7 survey result to the communications device KE3 by means of  
8 the result response signal VEA.

9  
10 In a further embodiment the communications device authorized  
11 to transmit can ask the PTT server, PS for example in this  
12 case, to transmit current status information during the  
13 survey. This can take place by means of the survey status  
14 message, VSQ for example in this case. During the survey  
15 actually occurring status information on the survey is  
16 accordingly communicated to the communications device  
17 authorized to transmit. The communications device, which has  
18 just provided its response signal or/and its specific request  
19 signal FS, provides this status information.

20  
21 In a possible additional embodiment it is possible during the  
22 survey to restrict or extend specific control and/or request  
23 functions in the communications devices participating in the  
24 survey. For example it may be advantageous for communications  
25 devices authorized to receive, for example KE1, KE2, to not  
26 be able to request status information from the PTT server,  
27 for example PS, about the progression of the survey. This may  
28 include the request as to how often a specific communications  
29 device has sent its specific request signal, such as FS,  
30 during the time response window, for example TU.

31  
32 Furthermore it may be expedient for specific functions within  
33 the PTT server to be blocked or activated. Thus it may be  
34 advantageous in practice that no additional communications



1 devices are incorporated into the survey by the PTT server  
2 during the time response window, for example TU.

3

4